LA 17TU
LA 25TU
LA 40TU

Montage- und Gebrauchsanweisung

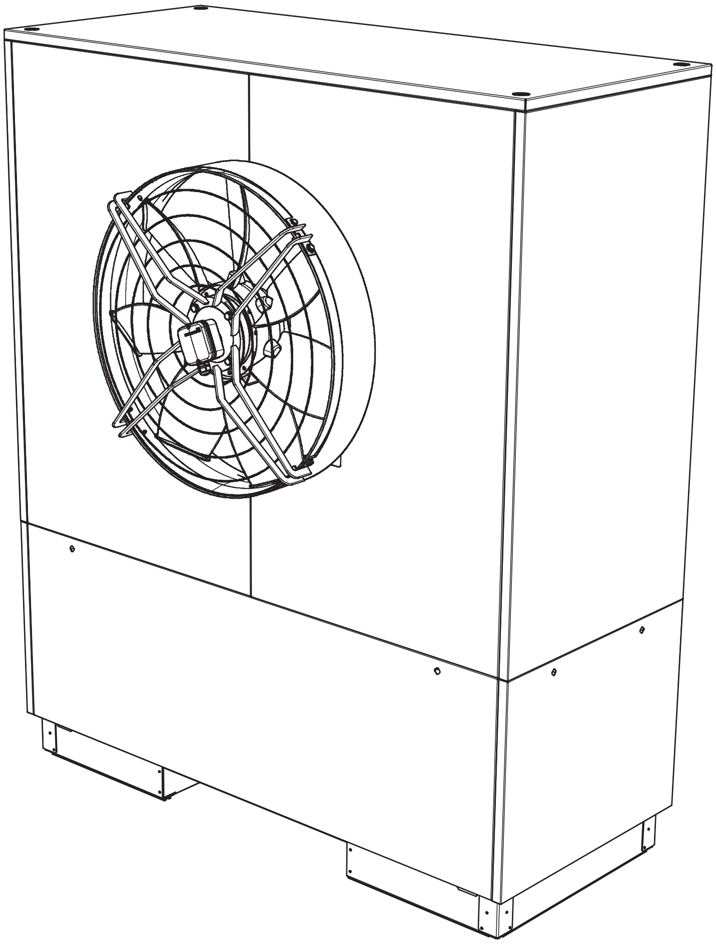
Installation and Operating Instructions

Instructions d'installation et d'utilisation

Deutsch

English

Français



Luft/Wasser-Wärmepumpe für Außenaufstellung

Air-to-Water Heat Pump for Outdoor Installation

Pompe à chaleur air-eau pour installation extérieure

Bestell-Nr. / Order no. / N° de commande : 452163.66.10

FD 8904

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English

1 Please Read Immediately

1.1 Important Information

ATTENTION!
For devices with a refrigerant quantity of 6 kg or more, the refrigerating circuit must be checked for leaks each year in compliance with regulation (EC) No. 842/2006.

ATTENTION!
The device is not suitable for operation with a frequency converter.

ATTENTION!
When transporting the heat pump, ensure that it is not tilted more than 45° (in any direction).

ATTENTION!
The transport securing device is to be removed prior to commissioning.

ATTENTION!
Do not restrict or block up the area around the air inlet or outlet.

ATTENTION!
Ensure that there is a clockwise rotating field: With incorrect wiring the starting of the heat pump is prevented. A corresponding warning is indicated on the display of the heat pump manager (adjust wiring).

ATTENTION!
Never use cleaning agents containing sand, soda, acid or chloride as these can damage the surfaces.

ATTENTION!
We recommend the installation of a suitable corrosion protection system to prevent the formation of deposits (e.g. rust) in the condenser of the heat pump.

ATTENTION!
Before opening the device, ensure that all circuits are isolated from the power supply.

ATTENTION!
Any work on the heat pump may only be performed by authorised and qualified after-sales service technicians.

1.2 Intended Use

This device is only intended for use as specified by the manufacturer. Any other use beyond that intended by the manufacturer is prohibited. This requires the user to abide by the manufacturers product information. Please refrain from tampering with or altering the device.

1.3 Legal Regulations and Directives

The construction and design of the heat pump complies with all relevant EU directives, DIN/VDE regulations (see CE declaration of conformity).

When connecting the heat pump to the power supply, the relevant VDE, EN and IEC standards are to be fulfilled. Any further connection requirements stipulated by the network operators must also be observed.

When connecting the heating system, all applicable regulations must also be adhered to.

Persons, especially children, who are not capable of operating the device safely due to their physical, sensory or mental abilities or due to their inexperience or lack of knowledge, must not operate this device without supervision or instruction by the person in charge.

Children must be supervised to ensure that they do not play with the device.

ATTENTION!
For devices with a refrigerant quantity of 6 kg or more, the refrigerating circuit must be checked for leaks each year in compliance with regulation (EC) No. 842/2006.

More information can be found in the chapter Maintenance / Cleaning.

1.4 Energy-Efficient Use of the Heat Pump

With the purchase of this heat pump you are helping to protect the environment. A prerequisite for energy-efficient operation is the correct design of the heat source system and heating system.

It is particularly important for the efficiency of a heat pump to keep the temperature difference between heating water and heat source as small as possible. For this reason, it is advisable to design the heat source and heating system very carefully. **A temperature difference of approx. one Kelvin increases the power consumption by around 2.5%.** When designing the heating system, it should be borne in mind that special consumers such as e.g. domestic hot water preparation should also be taken into consideration and dimensioned for low temperatures. **Underfloor heating systems (panel heating)** are optimally suited for heat pump use on account of the low flow temperatures (30 °C to 40 °C).

It is important to ensure that the heat exchangers are not contaminated during operation because this increases the temperature difference, in turn reducing the COP.

Correct adjustment of the heat pump manager is also important for energy-efficient use of the heat pump. Further information can be found in the operating instructions of the heat pump manager.

2 Purpose of the Heat Pump

2.1 Application

The air-to-water heat pump is to be used exclusively for the heating of heating water. It can be used in new or previously existing heating systems.

The heat pump is suitable for mono energy and bivalent operation down to an external temperature of -25 °C.

Proper defrosting of the evaporator is guaranteed by maintaining a heating water return flow temperature of more than 18 °C during continuous operation.

The heat pump is not designed for the increased heat consumption required when a building is being dried out. The additional heat consumption should be met using special devices provided by the customer. If a building is to be dried out in autumn or winter, we recommend installing an additional electric heating element (available as an accessory).

⚠ ATTENTION!

The device is not suitable for operation with a frequency converter.

2.2 Operating Principle

Surrounding air is drawn in by the ventilator and fed via the evaporator (heat exchanger). The evaporator cools the air, i.e. it extracts heat from it. This extracted heat is then transferred to the working medium (refrigerant) in the evaporator.

The heat is “pumped” to a higher temperature level by increasing its pressure with the aid of the electrically driven compressors. It is then transferred to the heating water using the liquefier (heat exchanger).

Electrical energy is used to raise the temperature of the heat in the environment to a higher level. As the energy extracted from the air is transferred to the heating water, this type of device is called an air-to-water heat pump.

The air-to-water heat pump consists of the main components evaporator, ventilator and expansion valve, as well as the low-noise compressors, the liquefier and the electrical control system.

At low ambient temperatures, humidity accumulates on the evaporator in the form of frost reducing the transfer of heat. The evaporator is defrosted automatically by the heat pump as required. Steam may be emitted from the air outlet depending on the atmospheric conditions.

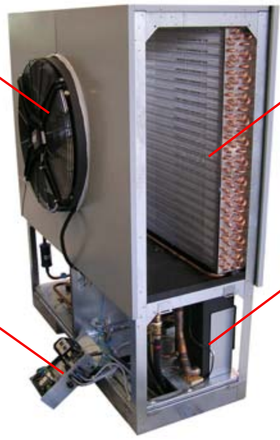
3 Scope of supply

3.1 Basic Device

The heat pump is of compact design and is supplied complete with the components listed below.

The refrigerating circuit contains the Kyoto protocol approved fluorinated refrigerant R404A with a GWP value of 3260. The refrigerant is CFC-free, non-ozone depleting and non-combustible.





1) Evaporator
2) Liquefier
3) Ventilator
4) Switch box
5) Compressor 1
6) Compressor 2
7) Filter dryer
8) Expansion valve
9) Collector

English

3.2 Switch box

The switch box is located in the heat pump. It can be swung out after removing the lower front cover and loosening the fastening screw located in the upper right-hand corner.

The switch box contains the supply connection terminals as well the power contactors and the soft starter unit.

The plug connectors for the control line are located on the switch box panel near the pivotal point.

3.3 Heat pump controller

The heat pump manager included in the scope of supply must be used to operate the air-to-water heat pump.

The heat pump manager is a convenient electronic regulation and control device. It controls and monitors the entire heating system based on the external temperature, as well as domestic hot water preparation and safety systems.

The customer must install the external temperature sensor, which is included in the scope of supply together with fixing.

The functions and usage of the heat pump manager are described in the operating instructions (supplied).

4 Transport

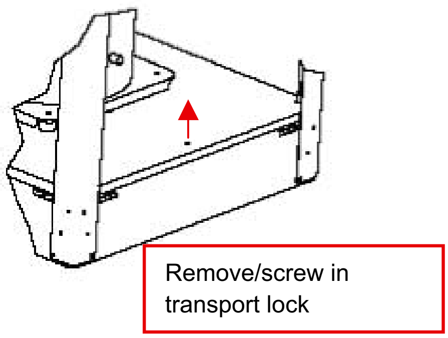
ATTENTION!

When transporting the heat pump, ensure that it is not tilted more than 45° (in any direction).

A wooden pallet should be used to transport the heat pump to its final installation location. The heat pump is fixed to the transport pallet by four transit bolts. These must be removed (only in the case of the LA17-25TU). The basic device can be transported with a lift truck, a crane, or by means of 3/4" pipes fed through the holes in the base plate. The holes are to be covered at the installation location using the 8 black dust caps, which are supplied with the device. (only in the case of the LA 17-25TU):

The transport eyebolts must be removed after transportation, and the sheet metal openings must be closed using the 4 vent plugs supplied.

After transportation, the transport fastening in the device is to be removed from both sides of the base.



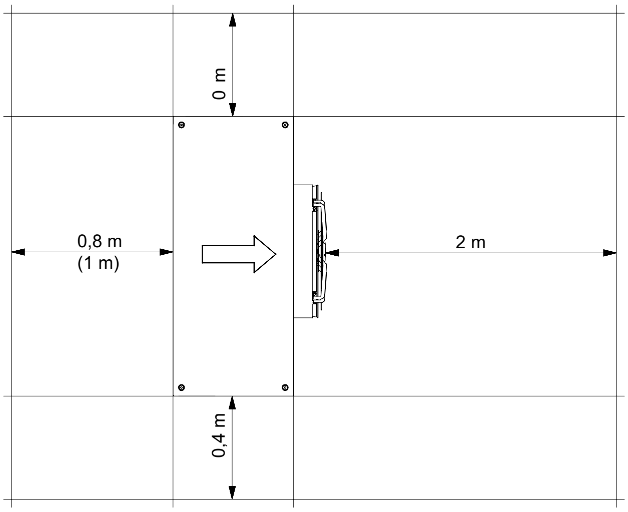
ATTENTION!

The transport securing device is to be removed prior to commissioning.

5 Set-up

5.1 General

The device should always be installed on a permanently smooth, even and horizontal surface. The entire frame should lie directly on the ground to ensure a good soundproof seal and to prevent the water-bearing components from becoming too cold. If this is not the case, additional insulation measures may be necessary. Furthermore, the heat pump should be set up so that the air outlet direction of the ventilator is perpendicular to the main wind direction to allow unrestricted defrosting of the evaporator. It must be possible to carry out maintenance work without hindrance. This is ensured when observing the distances to solid walls as shown in the figure.



The values in parentheses apply to the LA 40TU.

The specified dimensions are valid for stand-alone installation only.

ATTENTION!

Do not restrict or block up the area around the air inlet or outlet.

5.2 Condensed Water Pipe

Condensed water that forms during operation must be drained off frost-free. To ensure proper drainage, the heat pump must be mounted horizontally. The condensed water pipe must have a minimum diameter of 50 mm and should be fed frost-free into a sewer. Condensed water should not be discharged directly into clearing tanks and cesspits because the aggressive vapours could destroy the evaporator.

6 Installation

6.1 General

The following connections need to be established on the heat pump:

- Flow and return flow of the heating system
- Condensate drain
- Control line to the heat pump manager
- Power supply

6.2 Heating system connection

The heating system connections on the heat pump are to be made inside the device. Refer to the device information for the connection sizes. Route the connection hoses out of the device in a downwards direction. Use a spanner to firmly grip the transitions when connecting the heat pump.

Before connecting the heating water system to the heat pump, the heating system must be flushed to remove any impurities, residue from sealants, etc. Any accumulation of deposits in the liquefier could cause the heat pump to completely break down.

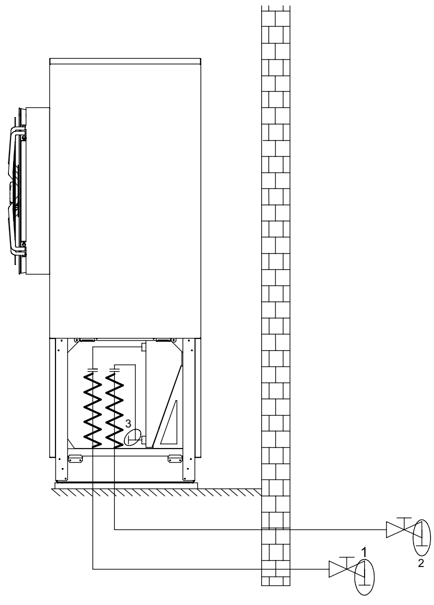
Once the heating system has been installed, it must be filled, deaerated and pressure-tested.

Minimum heating water flow

The minimum heating water flow through the heat pump must be assured in all operating states of the heating system. This can be accomplished, for example, by installing a manifold without differential pressure.

Antifreeze

A method of manual drainage (see illustration) should be provided for heat pumps which are exposed to frost. The antifreeze function of the heat pump manager is active whenever the manager and the heat circulating pump are ready for operation. If the heat pump is taken out of service or in the event of a power failure, the system has to be drained. The heating circuit should be operated with a suitable antifreeze if heat pump systems are implemented in buildings where a power failure can not be detected (holiday home).



6.3 Electrical Connection

A standard four-core cable is used for connecting the heat pump to the power supply.

The cable must be provided by the customer. The conductor cross section is selected in accordance with the power consumption of the heat pump (see Appendix Device Information) and the applicable VDE (EN) and VNB regulations.

An all-pole disconnecting device with a contact gap of at least 3 mm (e.g. utility blocking contactor or power contactor) as well as a 3-pole circuit breaker with common tripping for all external conductors must be installed in the power supply (tripping current in compliance with the Device Information). When connecting, ensure that the incoming supply has a clockwise rotating field.

Phase sequence: L1, L2, L3.

ATTENTION!

Ensure that there is a clockwise rotating field: With incorrect wiring the starting of the heat pump is prevented. A corresponding warning is indicated on the display of the heat pump manager (adjust wiring).

The control voltage is supplied via the heat pump manager.

The heat pump manager has a 230 V AC-50 Hz power supply and is connected in compliance with its own operating instructions (16 A fuse).

The control lines (not included in the scope of supply) have rectangular plug connectors on both ends. One end is connected to the heat pump manager, and the other end is connected to the switch box in the heat pump. The plug connections to the heat pump are located on the bottom of the switch box.

Two separate lines are used as control lines. One of the lines is designed for the 230 V control voltage level, the other for the signal and/or extra-low voltage level.

More detailed information can be found in the operating instructions of the heat pump manager.

For detailed information, see circuit diagrams in the Appendix.

English

English

7 Start-Up

7.1 General

To ensure that start-up is performed correctly, it should only be carried out by an after-sales service technician authorised by the manufacturer. This may be a condition for extending the guarantee (see Warranty Service).

7.2 Preparation

The following items need to be checked prior to start-up:

- The heat pump must be fully connected, as described in Chapter 6.
- All valves that could impair the proper flow of the heating water in the heating circuit must be open.
- The air intake and air outlet paths must be clear.
- The ventilator must turn in the direction indicated by the arrow.
- The settings of the heat pump manager must be adapted to the heating system in accordance with the managers's operating instructions.
- Ensure the condensate outflow functions properly.

7.3 Procedure

The heat pump is started up via the heat pump controller. Adjustments should be made in compliance with the instructions.

Any faults occurring during operation are also displayed on the heat pump manager and can be corrected as described in the operating instructions of the heat pump manager.

At hot water temperatures under 7 °C, start-up is not possible. The water in the buffer tank must be heated to a minimum of 18 °C with the second heat generator.

To ensure a problem-free start-up, the following procedure is to be implemented:

1) Close all consumer circuits.
2) Ensure that the heat pump has the correct water flow rate.
3) Use the controller to select the automatic operating mode.
4) In the special functions menu, start the “Start-up” programme.
5) Wait until a return flow temperature of at least 25 °C has been reached.
6) Now slowly reopen the heating circuit valves in succession so that the heating water flow is constantly raised by slightly opening the respective heating circuit. The heating water temperature in the buffer tank must not be allowed to drop below 20 °C during this process. This ensures that the heat pump can be defrosted at any time.
7) When all heat circuits are fully open and a return flow temperature of at least 18 °C is maintained, set a minimum volume flow quantity on the overflow valve (where present) and on the heat circulating pump.

8 Maintenance / Cleaning

8.1 Maintenance

To protect the paintwork, avoid leaning anything against the device or putting objects on the device. External heat pump parts can be wiped with a damp cloth and domestic cleaner.

⚠ **ATTENTION!**

Never use cleaning agents containing sand, soda, acid or chloride as these can damage the surfaces.

To prevent faults due to sediment in the heat exchanger of the heat pump, ensure that the heat exchanger in the heating system can not be contaminated. In the event that operating malfunctions due to contamination still occur, the system should be cleaned as described below.

8.2 Cleaning the Heating System

The ingress of oxygen into the heating water circuit may result in the formation of oxidation products (rust), particularly if steel components are used. These products enter the heating system via the valves, the circulating pumps and/or plastic pipes. It is therefore essential - in particular with respect to the piping of underfloor heating systems - that only diffusion-proof materials are used.

⚠ **ATTENTION!**

We recommend the installation of a suitable corrosion protection system to prevent the formation of deposits (e.g. rust) in the condenser of the heat pump.

Residue from lubricants and sealants may also contaminate the heating water.

In the case of severe contamination leading to a reduction in the performance of the liquefier in the heat pump, the system must be cleaned by a heating technician.

According to current information, we recommend using a 5% phosphoric acid solution for cleaning purposes. However, if cleaning needs to be performed more frequently, a 5% formic acid solution should be used.

In either case, the cleaning fluid should be at room temperature. We recommend flushing the heat exchanger in the direction opposite to the normal flow direction.

To prevent acidic cleaning agents from entering the heating system circuit, we recommend connecting the flushing device directly to the flow and return flow of the liquefier of the heat pump.

It is important that the system be thoroughly flushed using appropriate neutralising agents to prevent damage caused by cleaning agent residue remaining in the system.

Acids must be used with great care and all relevant regulations of the employers' liability insurance associations must be adhered to.

If in doubt, contact the manufacturer of the chemicals!

8.3 Cleaning the Air System

Evaporator, ventilator and condensate outflow should be cleaned of contamination (leaves, twigs, etc.) before each new heating period.

⚠ ATTENTION!

Before opening the device, ensure that all circuits are isolated from the power supply.

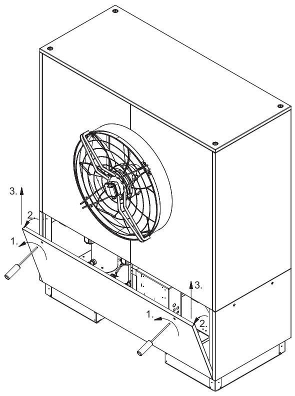
To prevent the evaporator and the condensate tray from being damaged, do not use hard or sharp objects for cleaning.

Under extreme weather conditions (e.g. snow drifts), ice may form on the air intake and air outlet grids. If this happens, the ice must be removed in the vicinity of the air intake and air outlet grids to ensure that the minimum air flow is maintained.

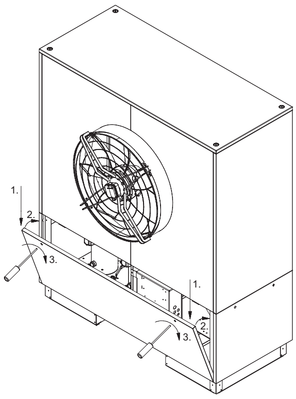
To ensure proper drainage from the condensate tray, it must be regularly inspected and cleaned, if necessary.

All panelling can be removed to allow accessing the inside of the device. Note that the upper covers can only be removed after the lower covers have been taken off.

The two sash fasteners must be opened for this purpose. The cover must then be slightly tilted forward and lifted off toward the top.

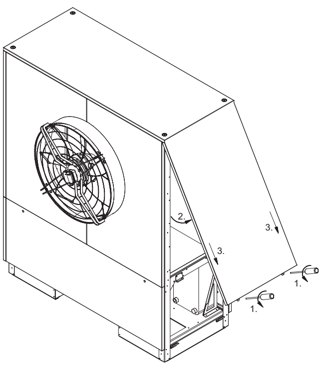


Opening the lower covers

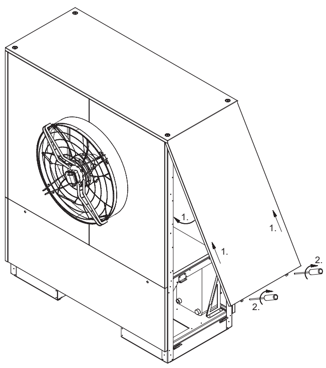


Closing the lower covers

The lateral and rear panels are hooked into the cover panel. Loosen the two screws for dismantling and unhook the panels by pulling them back.

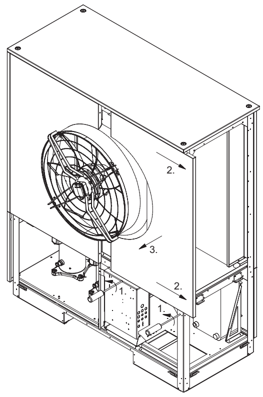


Opening the lateral and rear cover panels on top

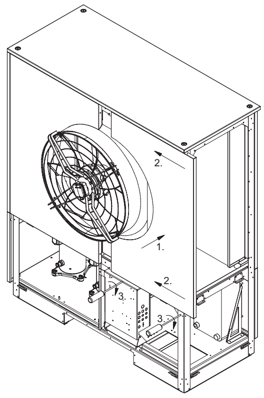


Closing the lateral and rear cover panels on top

The cover panels on the ventilator side can be dismantled after the two upper lateral side panels have been removed. Loosen the screws for this purpose, slide the panel slightly to the right or left and then lift it off towards the front.



Opening the upper front covers



Closing the upper front covers

8.4 Maintenance

Refrigerating circuits with a minimum refrigerant quantity of 3kg, or "hermetically sealed" refrigerating circuits with a minimum refrigerant quantity of 6 kg must be tested for leaks yearly by the operator according to regulation (EC) No. 842/2006.

The leak test is to be documented and archived for a minimum of 5 years. The test is to be carried out by certified personnel only according to regulation (EC) No. 1516/2007. The attached table can be used as a basis for the documentation.

9 Faults / Trouble-Shooting

This heat pump is a quality product and designed for trouble-free and maintenance-free operation. In the event that a fault should occur, it will be indicated on the heat pump manager display. Simply consult the Faults and Trouble-Shooting page in the operating instructions of the heat pump manager. If you cannot correct the fault yourself, please contact your after-sales service technician.

⚠ ATTENTION!

Any work on the heat pump may only be performed by authorised and qualified after-sales service technicians.

10 Decommissioning / Disposal

Before removing the heat pump, disconnect it from the power source and close all valves. Observe all environmentally-relevant requirements regarding the recovery, recycling and disposal of materials and components in accordance with all applicable standards. Particular attention should be paid to the proper disposal of refrigerants and refrigeration oils.

11 Device Information

1	Type and order code			LA 17TU		LA 25TU	
2	**Design**						
2.1	Model / controller			Universal / external		Universal / external	
2.2	Thermal heat metering			Integrated		Integrated	
2.3	Installation location / degree of protection according to EN 60529			Outdoor / IP24		Outdoor / IP24	
2.4	Antifreeze condensate tray / heating water			Heated / yes[1]		Heated / yes[1]	
2.5	Performance levels			2		2	
3	**operating limits**						
3.1	Heating water flow / return flow		°C	up to 58 ± 2 / from 18		up to 58 ± 2 / from 18	
	Air (heat source)		°C	-25 to +35		-25 to +35	
4	**Performance data / flow rate**						
4.1	Heating water flow rate / internal pressure differential	A7/W35/30	m³/h / Pa	3,4 / 9900		4,5 / 8300	
		A7/W45/38	m³/h / Pa	2,3 / 5000		3,1 / 4000	
		A7/W55/45	m³/h / Pa	1,7[2] / 2900		2,2[2] / 2100	
4.2	Heat output / COP [3]			EN 255	EN 14511	EN 255	EN 14511
		at A-7 / W35	kW / --- [4]	11,2 / 3,0	10,3 / 2,9	17,0 / 3,1	16,7 / 3,0
			kW / --- [5]	5,5 / 3,1	5,4 / 3,0	9,3 / 3,1	9,1 / 3,0
		at A2 / W35	kW / --- [4]	14,7 / 3,8	14,6 / 3,7	19,7 / 3,8	19,6 / 3,7
			kW / --- [5]	8,4 / 3,9	8,2 / 3,8	11,4 / 3,9	11,3 / 3,8
		at A7 / W35	kW / --- [4]		19,6 / 4,4		26,1 / 4,4
			kW / --- [5]		10,0 / 4,5		13,9 / 4,5
		at A7 / W55	kW / --- [4]		18,8 / 2,9		25,0 / 2,9
			kW / --- [5]		9,2 / 2,8		12,4 / 2,8
		at A10 / W35	kW / --- [4]	20,9 / 4,9	20,5 / 4,8	28,4 / 4,9	28,2 / 4,8
			kW / --- [5]	11,1 / 5,0	10,5 / 4,9	15,3 / 5,0	15,0 / 4,9
4.3	Sound power level		dB(A)	65		67	
4.4	Sound pressure level at a distance of 10 m (air outlet side) [6]		dB(A)	37		40	
4.5	Air flow		m³/h	5500		7500	
5	**Dimensions, connections and weight**						
5.1	Device dimensions without connections		H x W x L mm	1940 x 1600 x 955 (750)		1940 x 1600 x 955 (750)	
5.2	Device connections for heating system		Inch	Thread 1 1/4" flat sealing		Thread 1 1/2" flat sealing	
5.3	Weight of the transportable unit(s) incl. packaging		kg	436		510	
5.4	Refrigerant; total filling weight		type / kg	R404A / 8.2		R404A / 10.2	
5.5	Lubricant; total filling quantity		type / litres	Polyolester (POE) / 2.9		Polyolester (POE) / 3.8	
6	**Electrical connection**						
6.1	Nominal voltage; fuse protection		V / A	400 / 16		400 / 25	
6.2	Starting current with soft starter		A	17		22	
6.3	Nominal power consumption A2 W35/ max. consumption [3,4]		kW	3,9 / 7,5		5,3 / 9,2	
6.4	Nominal current A2 W35 / cosφ[4]		A / ---	8,6 / 0,8		11,8 / 0,8	
6.5	Max. power consumption of compressor protection (per compressor)		W	70, thermostatically controlled		70, thermostatically controlled	
7	**Complies with the European safety regulations**			[7]		[7]	
8	**Additional model features**						
	Type of defrosting (according to need)			Reverse circulation		Reverse circulation	

1. The heat circulating pump and the heat pump controller must always be ready for operation.
2. Minimum heating water flow rate
3. These data indicate the size and capacity of the system according to EN 255 (10K at A2) and EN 14511 (5K at A7) without weather-proof protective cover. For an analysis of the economic and energy efficiency of the system, other parameters, in particular the defrosting capacity, the bivalence point and the regulation, should also be taken into consideration. The specified values have the following meaning, e.g. A7 / W35: External air temperature 7 °C and heating water flow temperature 35 °C.
4. 2-compressor operating mode
5. 1-compressor operating mode
6. The specified sound pressure level corresponds to the operating noise of the heat pump in heating operation with a flow temperature of 35°C.
7. See CE declaration of conformity

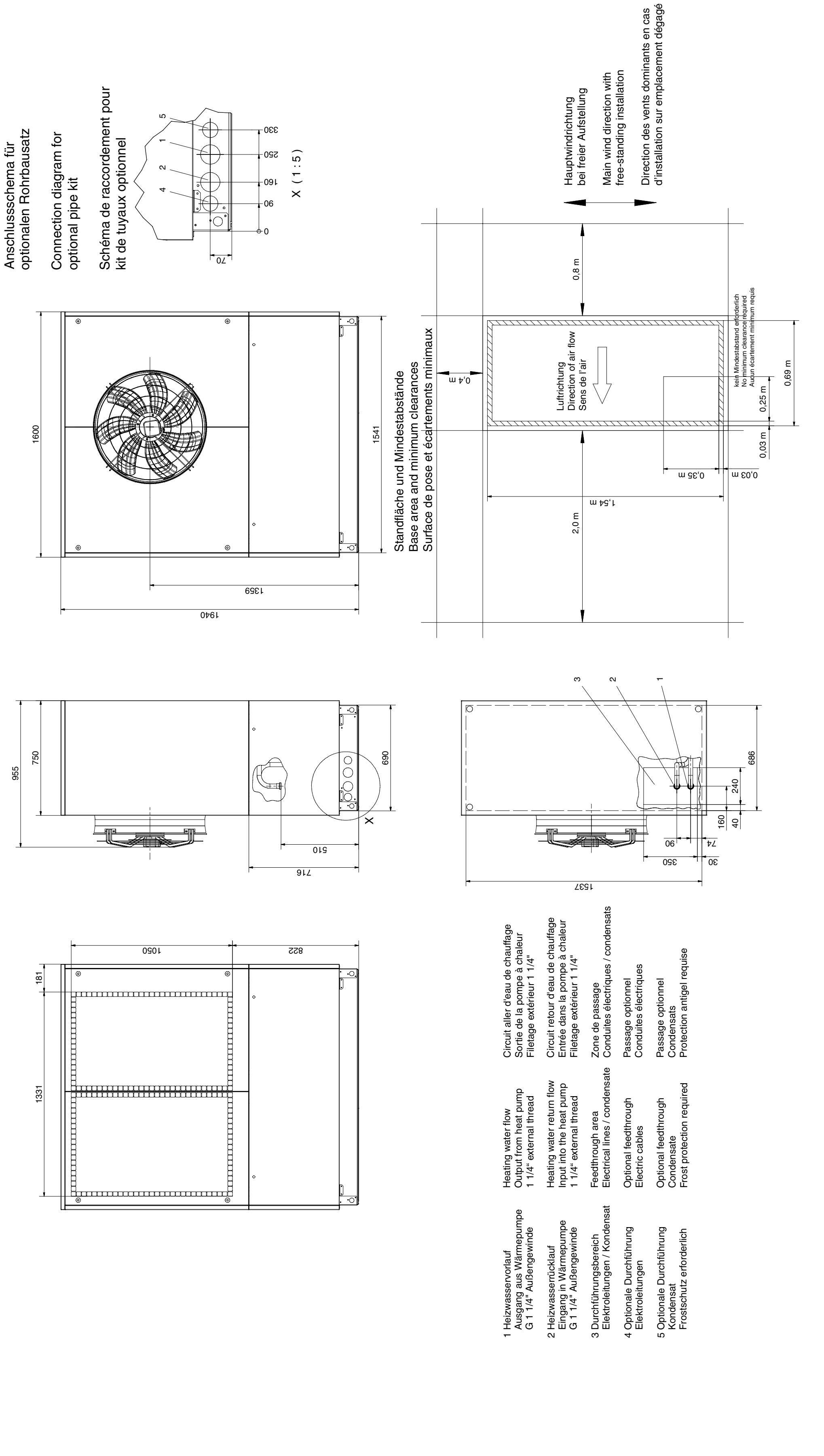
1	**Type and order code**				LA 40TU	
2	**Design**					
2.1	**Model / controller**				Universal / external	
2.2	**Thermal energy metering**				Integrated	
2.3	**Installation location / degree of protection according to EN 60529**				Outdoor / IP24	
2.4	**Antifreeze condensate tray / heating water**				Heated / yes[1]	
2.5	**Performance levels**				2	
3	**Operating limits**					
3.1	**Heating water flow / return flow**		**°C**		up to 58 ± 2 / from 18	
	Air (heat source)		**°C**		-25 to +35	
4	**Performance data / flow rate**					
4.1	**Heating water flow rate / internal pressure differential**	**A7/W35/30**	**m³/h / Pa**		6,2 / 3900	
		A7/W45/38	**m³/h / Pa**		4,3 / 1900	
		A7/W55/45	**m³/h / Pa**		3,0[2] / 950	
4.2	**Heat output / COP [3]**				EN 255	EN 14511
		at A-7 / W35	**kW / ---**	**4**	24,3 / 3,1	23,8 / 3,0
			kW / ---	**5**	13,8 / 3,2	13,5 / 3,1
		at A2 / W35	**kW / ---**	**4**	30,4 / 3,9	30,0 / 3,8
			kW / ---	**5**	17,1 / 4,0	16,8 / 3,9
		at A7 / W35	**kW / ---**	**4**		35,7 / 4,4
			kW / ---	**5**		20,0 / 4,6
		at A7 / W55	**kW / ---**	**4**		33,1 / 2,7
			kW / ---	**5**		17,6 / 2,7
		at A10 / W35	**kW / ---**	**4**	38,5 / 4,8	38,1 / 4,7
			kW / ---	**5**	22,0 / 5,0	21,7 / 4,9
4.3	**Sound power level**		**dB(A)**		70	
4.4	**Sound pressure level at a distance of 10 m (air outlet side)**	**6**	**dB(A)**		43	
4.5	**Air flow**		**m³/h**		11000	
5	**Dimensions, connections and weight**					
5.1	**Device dimensions without connections**		**H x W x L mm**		2100 x 1735 x 980 (750)	
5.2	**Device connections for heating system**		**Inch**		1 1/2" internal thread	
5.3	**Weight of the transportable unit(s) incl. packaging**		**kg**		585	
5.4	**Refrigerant; total filling weight**		**type / kg**		R404A / 11.8	
5.5	**Lubricant; total filling quantity**		**type / litres**		Polyolester (POE) / 4.1	
6	**Electrical connection**					
6.1	**Nominal voltage; fuse protection**		**V / A**		400 / 25	
6.2	**Starting current with soft starter**		**A**		30	
6.3	**Nominal power consumption A2 W35/ max. consumption [3] [4]**		**kW**		7,9 / 12,6	
6.4	**Nominal current A2 W35 / cosφ[4]**		**A / ---**		14,2 / 0,8	
6.5	**Max. power consumption of compressor protection (per compressor)**		**W**		70, thermostatically controlled	
7	**Complies with the European safety regulations**				7	
8	**Additional model features**					
	Type of defrosting (according to need)				Reverse circulation	

1. The heat circulating pump and the heat pump controller must always be ready for operation.
2. Minimum heating water flow
3. These data indicate the size and capacity of the system according to EN 255 (10K at A2) and EN 14511 (5K at A7) without weather-proof protective cover. For an analysis of the economic and energy efficiency of the system, other parameters, in particular the defrosting capacity, the bivalence point and the regulation, should also be taken into consideration. The specified values have the following meaning, e.g. A7 / W35: External air temperature 7 °C and heating water flow temperature 35 °C.
4. 2-compressor operating mode
5. 1-compressor operating mode
6. The specified sound pressure level corresponds to the operating noise of the heat pump in heating operation with a flow temperature of 35°C.
7. See CE declaration of conformity

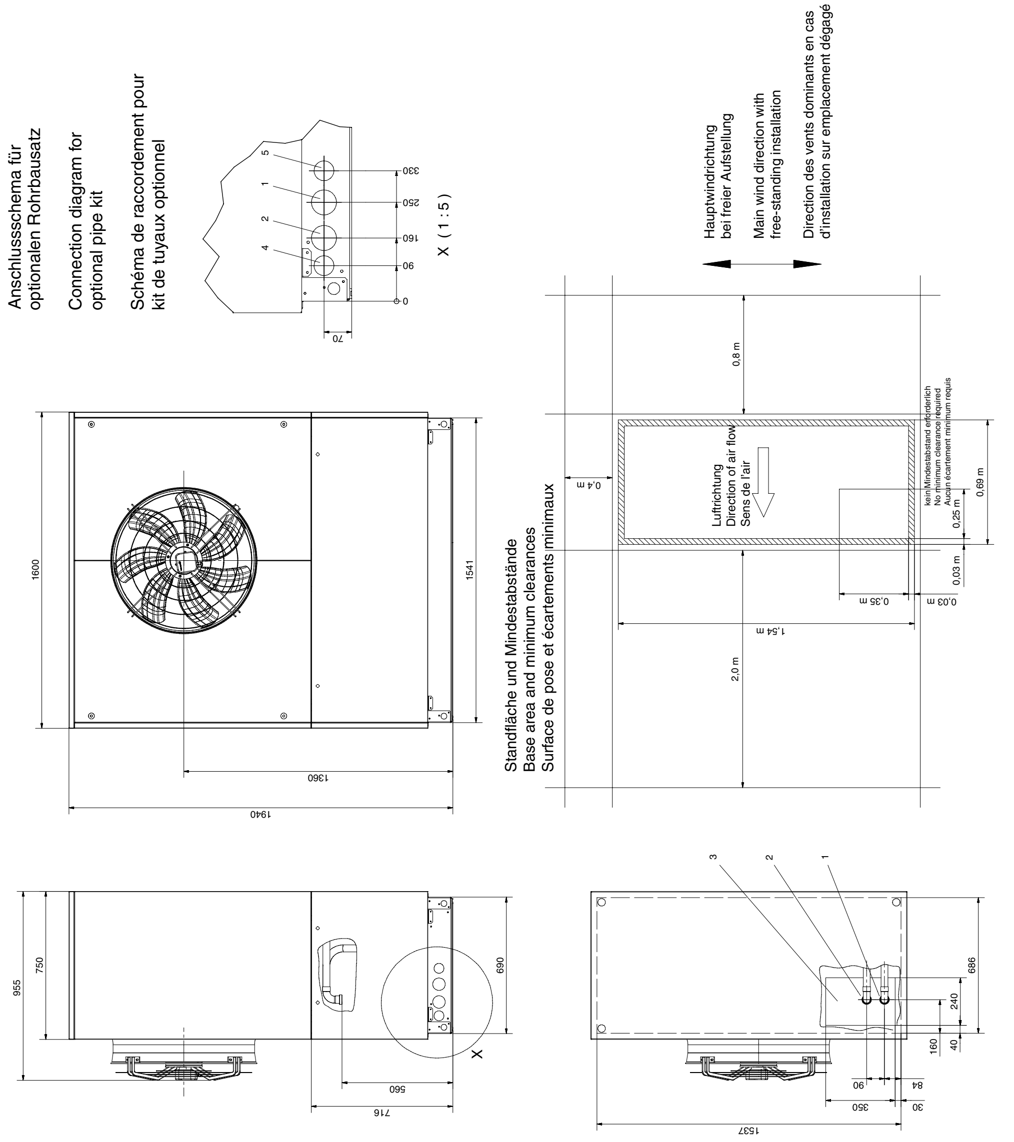
Anhang / Appendix / Annexes

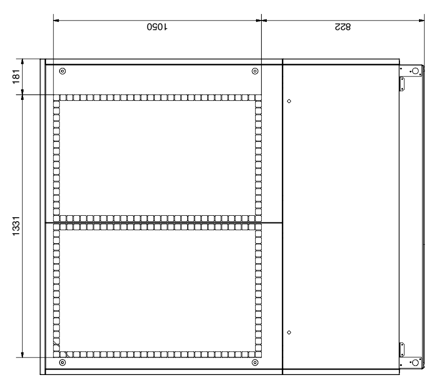
1 Maßbilder / Dimension Drawings / Schémas cotés

1.1 Maßbild / Dimension Drawing / Schéma coté LA 17TU



1.2 Maßbild / Dimension Drawing / Schéma coté LA 25TU

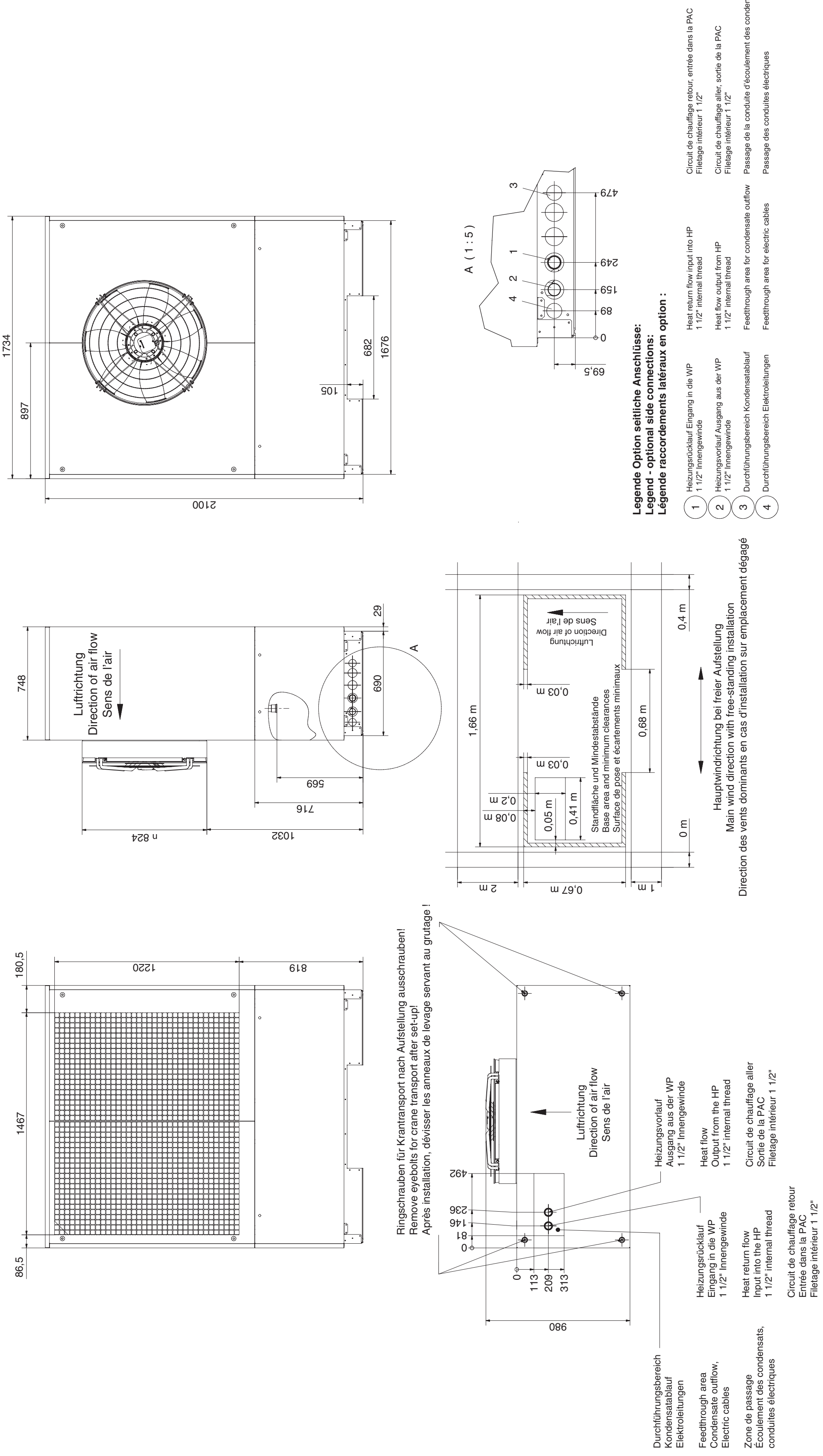




1 Heizwasservorlauf Ausgang aus Wärmepumpe G 1 1/2" Außengewinde	Heating water flow Output from heat pump 1 1/2" external thread	Circuit aller d'eau de chauffage Sortie de la pompe à chaleur Filetage extérieur 1 1/2"
2 Heizwasserrücklauf Eingang in Wärmepumpe G 1 1/2" Außengewinde	Heating water return flow Input into the heat pump 1 1/2" external thread	Circuit retour d'eau de chauffage Entrée dans la pompe à chaleur Filetage extérieur 1 1/2"
3 Durchführungsbereich Elektroleitungen / Kondensat	Feedthrough area Electrical lines / condensate	Zone de passage Conduites électriques / condensats
4 Optionale Durchführung Elektroleitungen	Optional feedthrough Electric cables	Passage optionnel Conduites électriques
5 Optionale Durchführung Kondensat Frostschutz erforderlich	Optional feedthrough Condensate Frost protection required	Passage optionnel Condensats Protection antigel requise

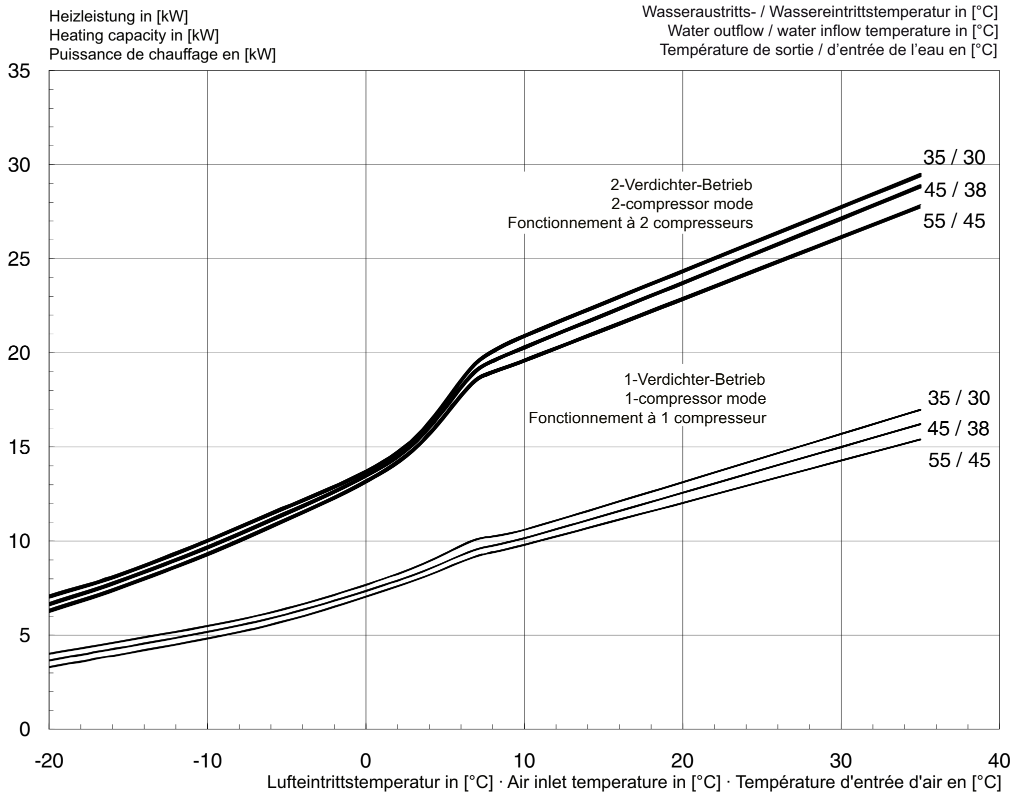
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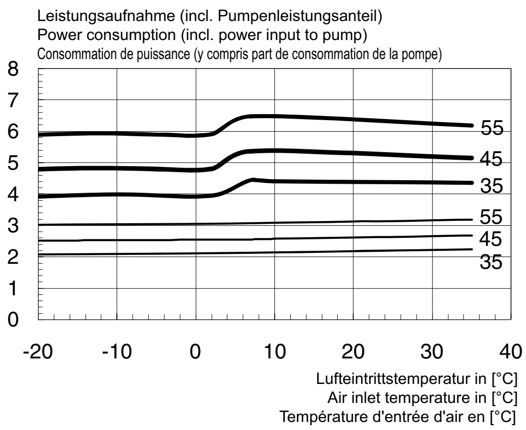
1.3 Maßbild / Dimension Drawing / Schéma coté LA 40TU

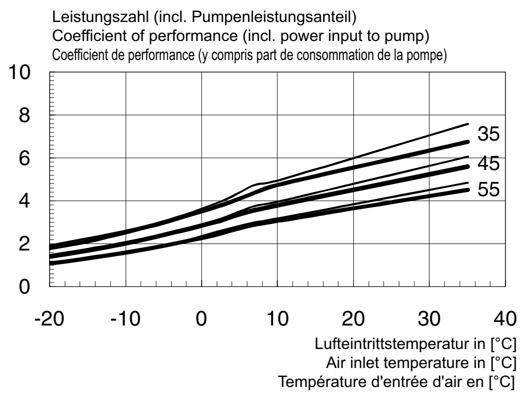


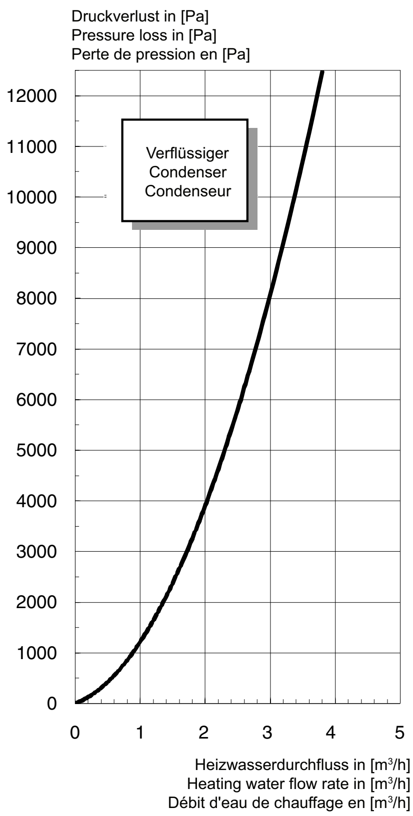
2 Diagramme / Diagrams / Diagrammes

2.1 Kennlinien / Characteristic Curves / Courbes caractéristiques LA 17TU

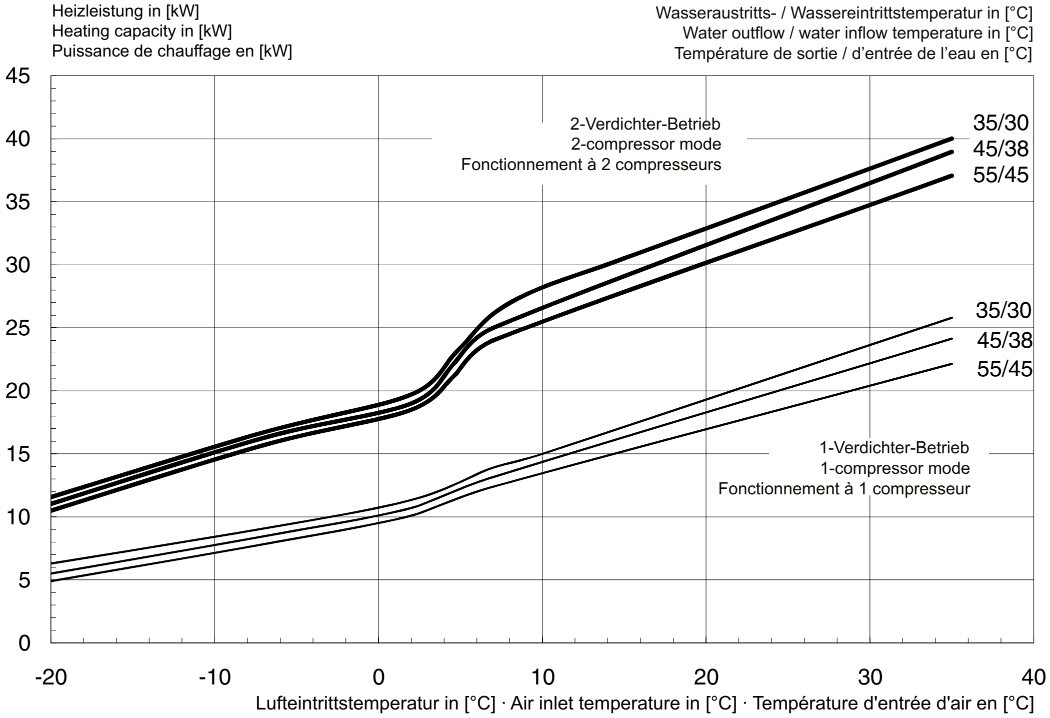


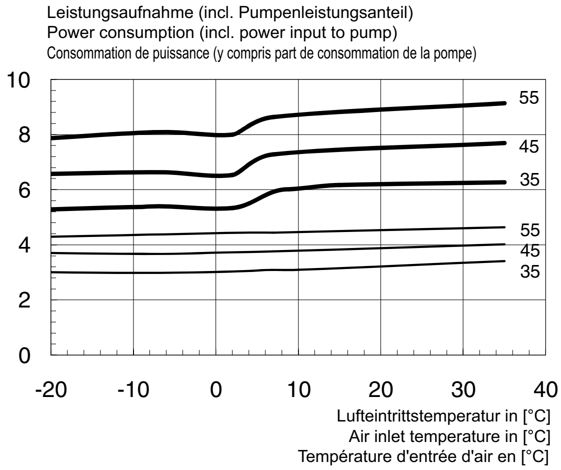


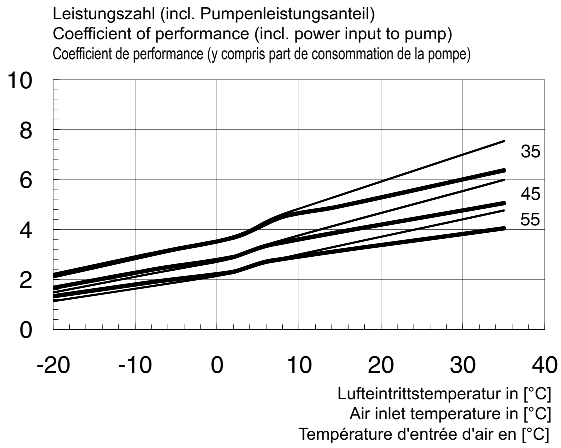


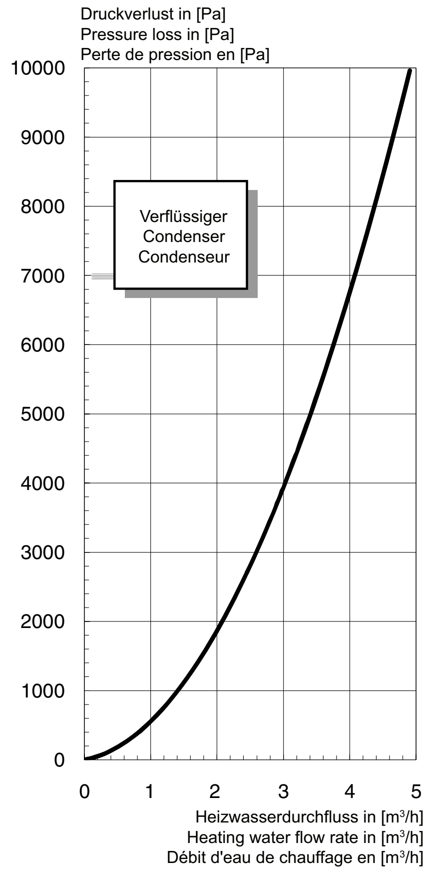


2.2 Kennlinien / Characteristic Curves / Courbes caractéristiques LA 25TU

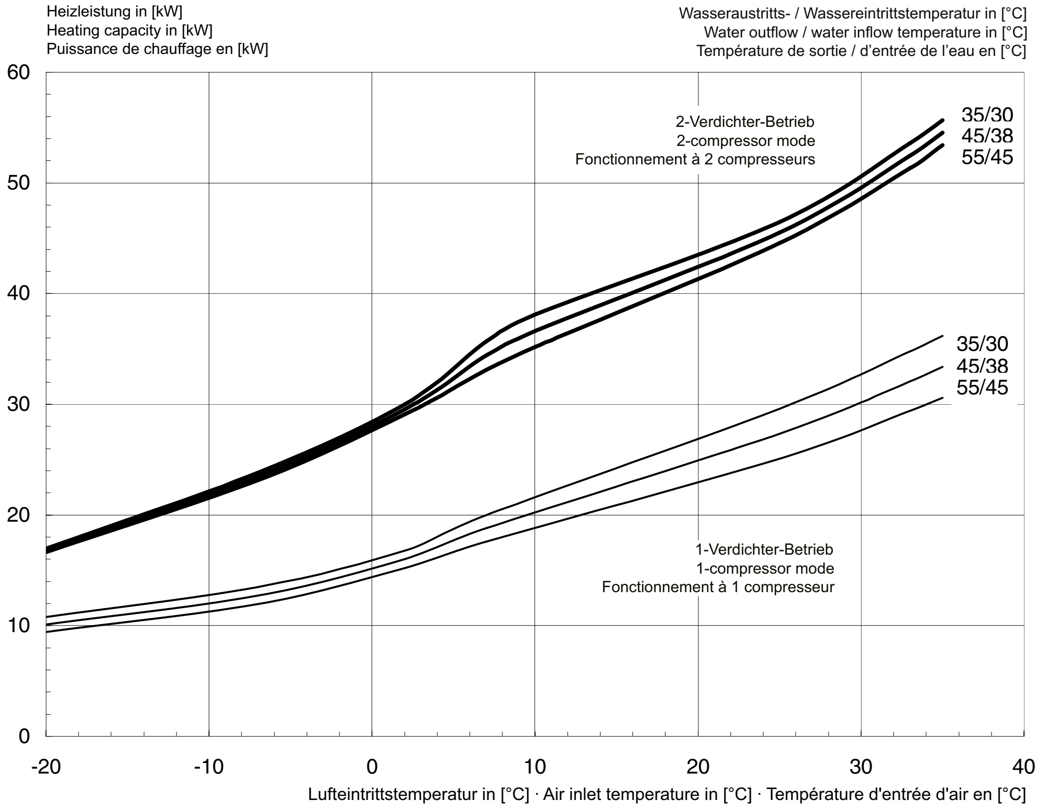


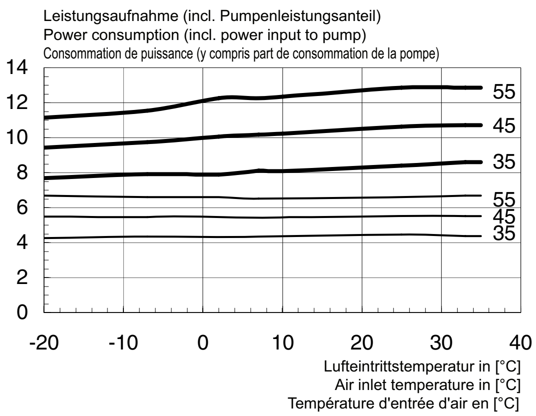


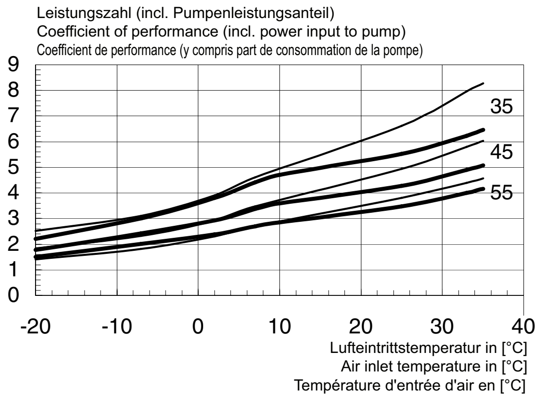


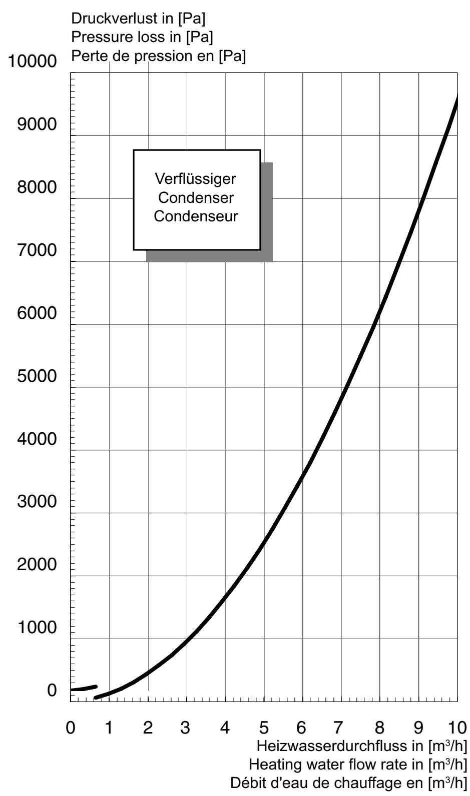


2.3 Kennlinien / Characteristic Curves / Courbes caractéristiques LA 40TU





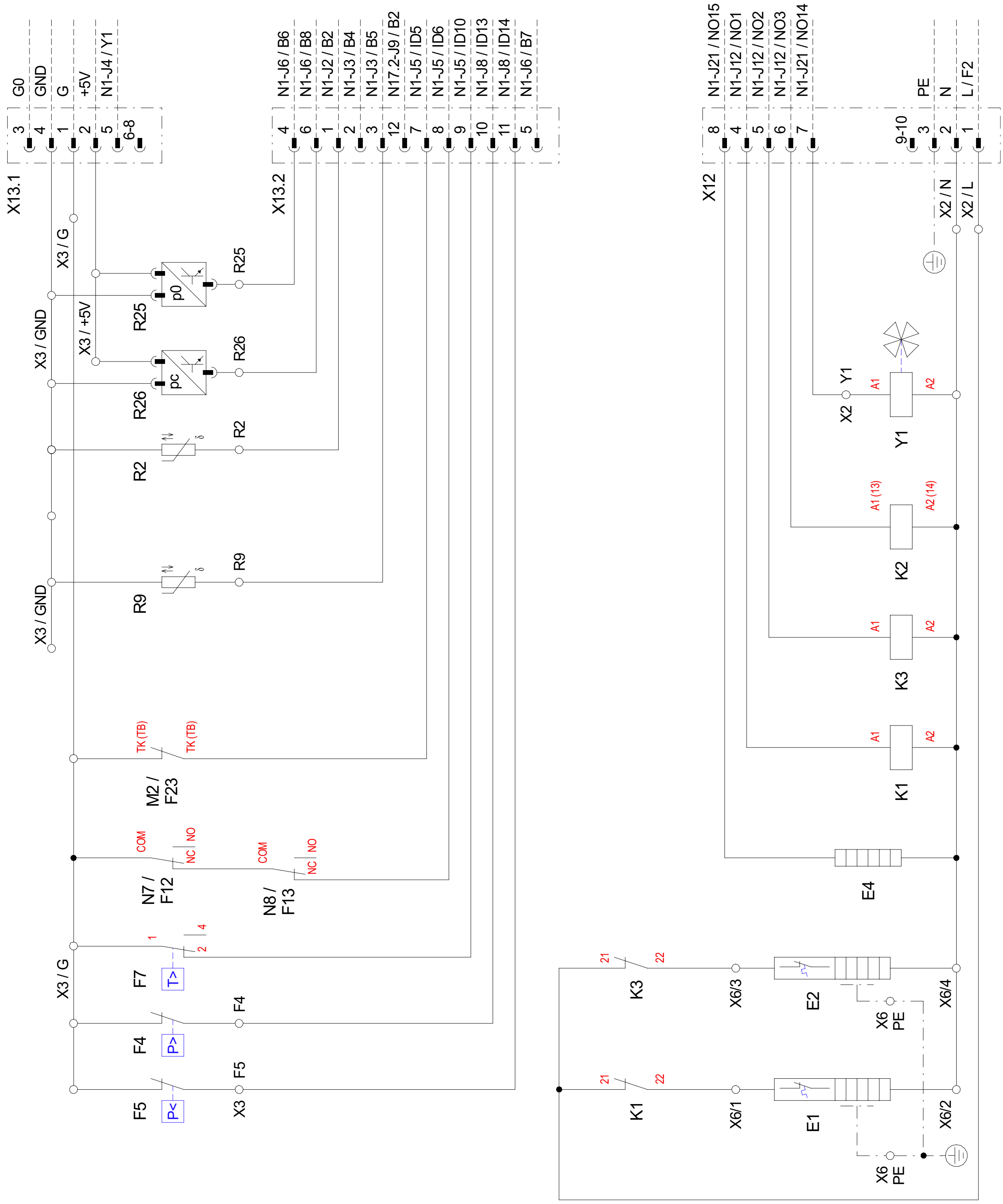




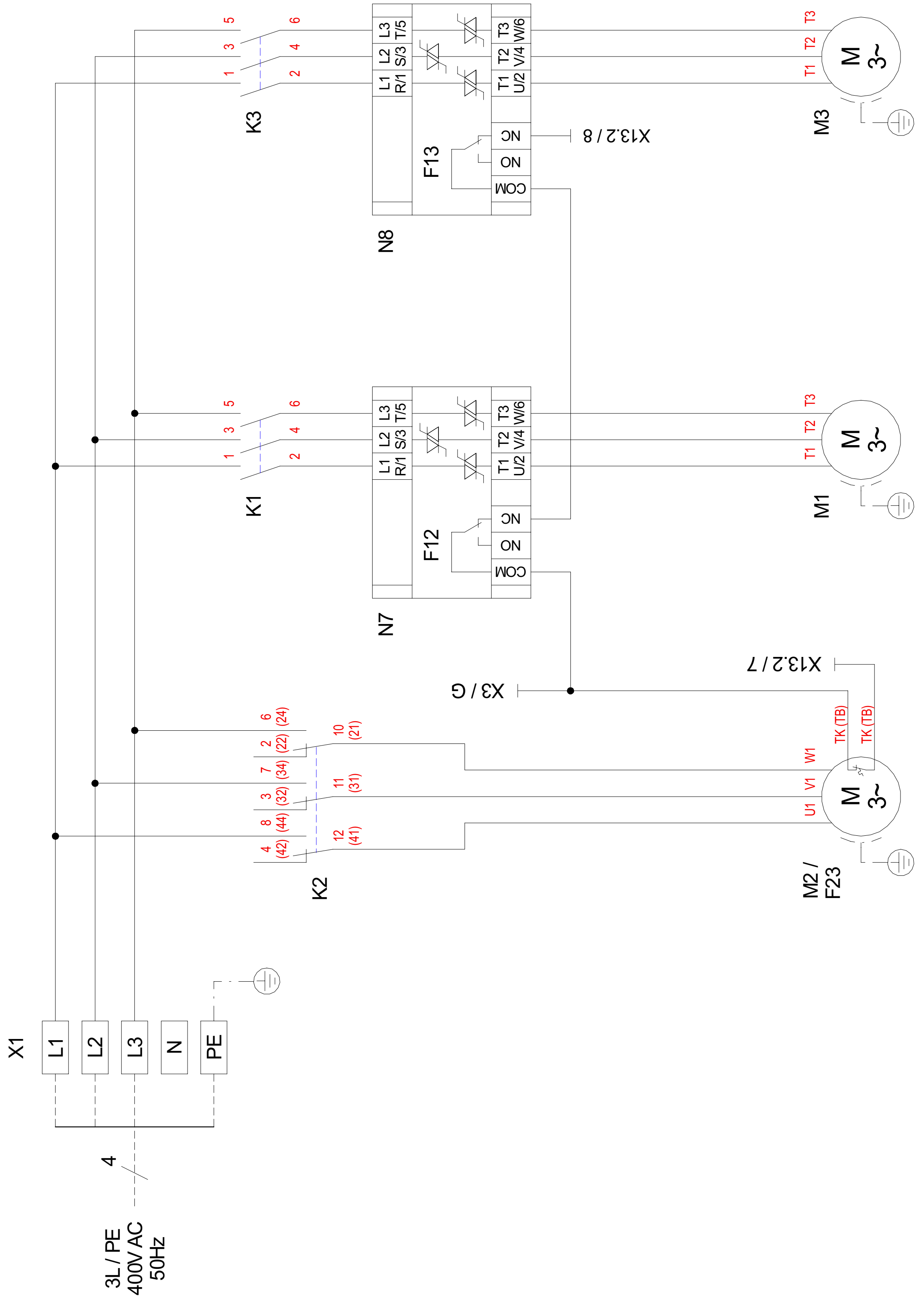
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3 Stromlaufpläne / Circuit Diagrams / Schémas électriques

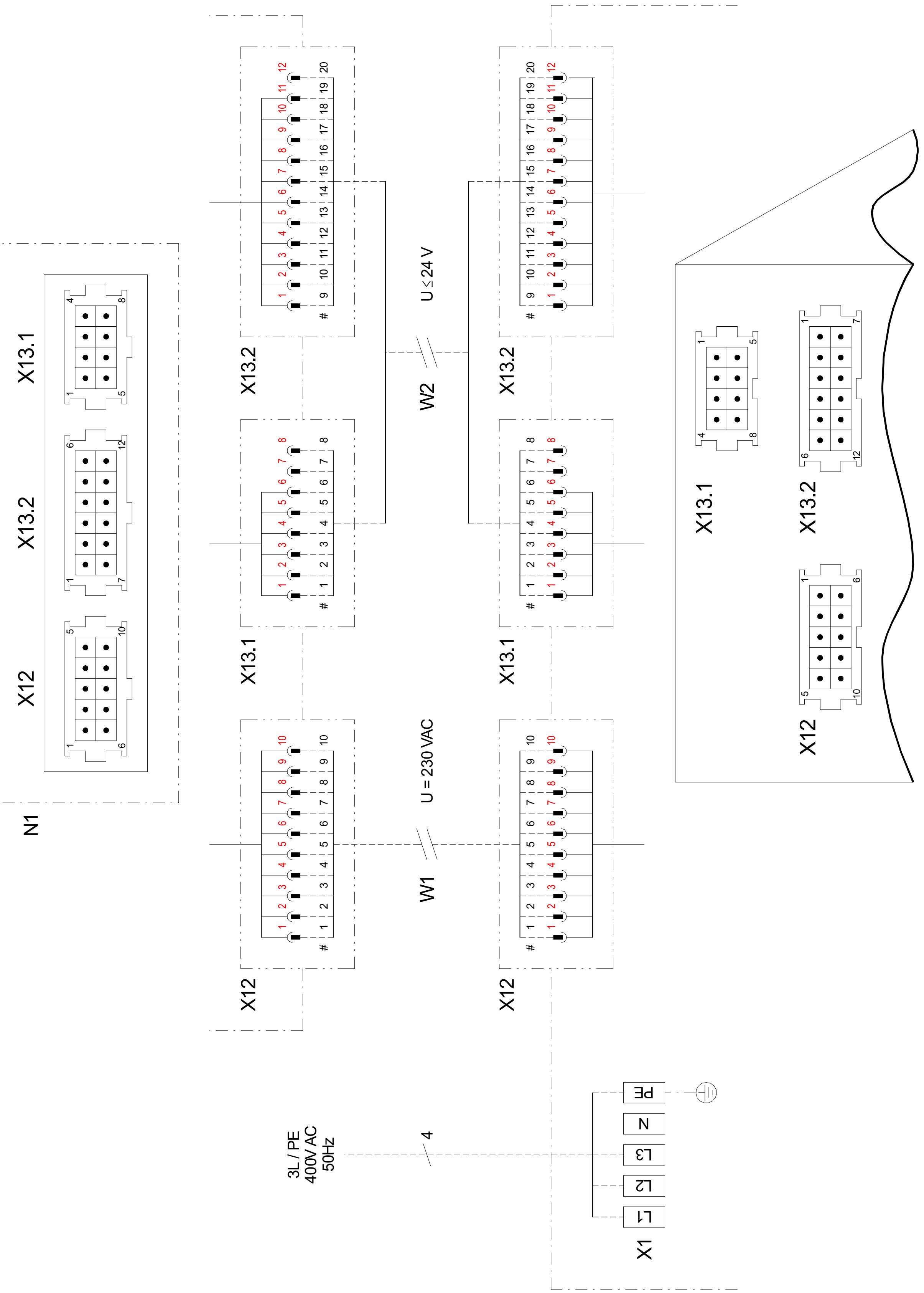
3.1 Steuerung / Control / Commande LA 17TU - LA 40TU



3.2 Last / Load / Charge LA 17TU - LA 40TU



3.3 Anschlussplan / Circuit Diagram / Schéma électrique LA 17TU - LA 40TU

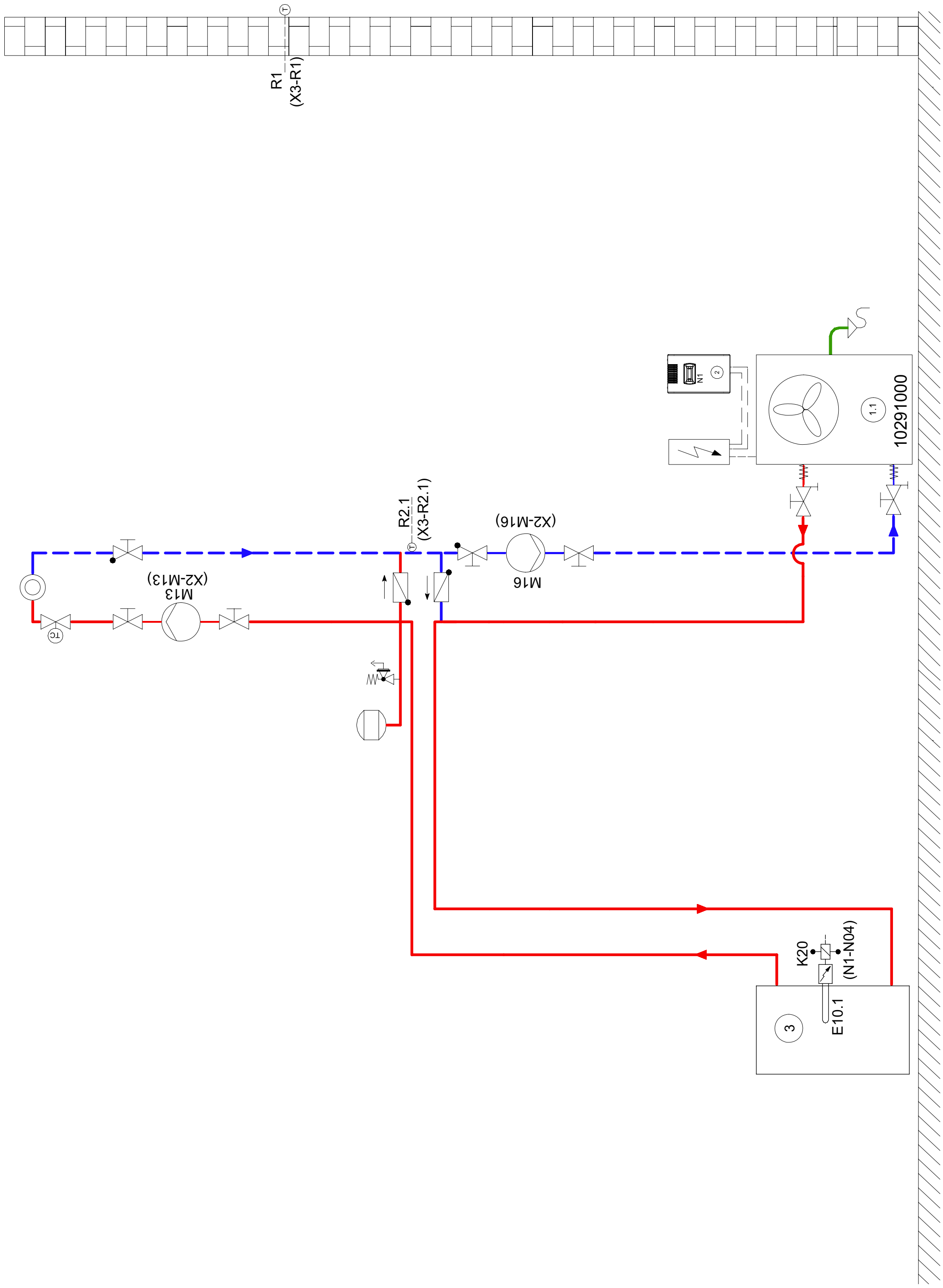


3.4 Legende / Legend / Légende LA 17TU - LA 40TU

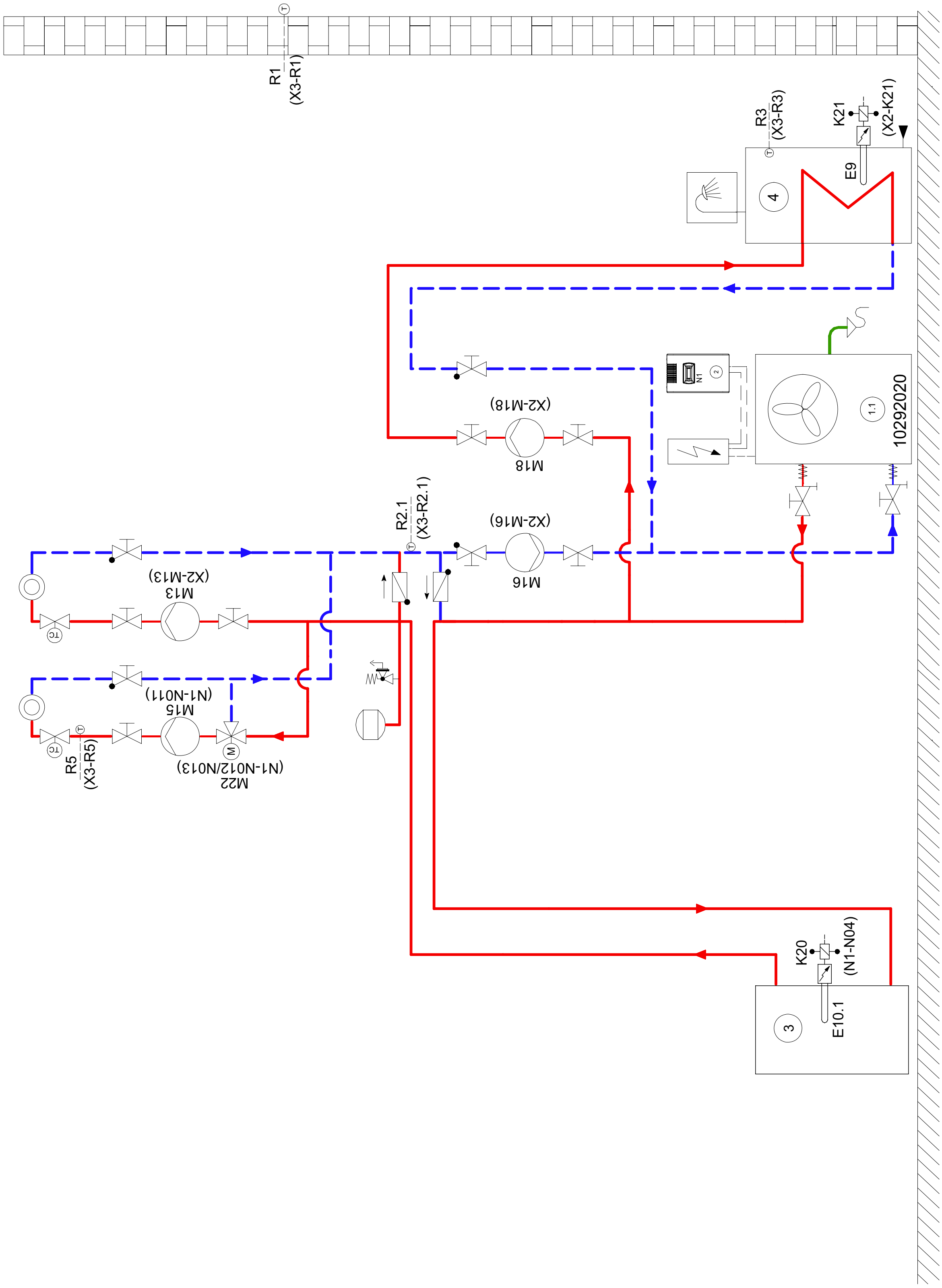
E1	Ölsumpfheizung Verdichter 1	Oil sump heater for compressor 1	Chauffage à carter d'huile compresseur 1
E2	Ölsumpfheizung Verdichter 2	Oil sump heater for compressor 2	Chauffage à carter d'huile compresseur 2
E4	Düsenringheizung Ventilator	Nozzle ring heater for ventilator	Chauffage à couronne perforée ventilateur
F4	Pressostat Hochdruck	High-pressure controller	Pressostat haute pression
F5	Pressostat Niederdruck	Low-pressure controller	Pressostat basse pression
F7	Thermostat Heißgasüberwachung	Thermostat for hot gas monitoring	Thermostat surveillance gaz de chauffage
F12	Störung N7	Fault N7	Défaut N7
F13	Störung N8	Fault N8	Défaut N8
F23	Störung Ventilator	Ventilator fault	Défaut ventilateur
K1	Schütz Verdichter 1	Contactor compressor 1	Contacteur compresseur 1
K2	Lastrelais Ventilator	Load relay for fan	Relais de charge ventilateur
K3	Schütz Verdichter 2	Contactor compressor 2	Contacteur compresseur 2
M1	Verdichter 1	Compressor 1	Compresseur 1
M2	Ventilator	Ventilator	Ventilateur
M3	Verdichter 2	Compressor 2	Compresseur 2
N1	Wärmepumpenmanager	Heat pump manager	Gestionnaire de pompe à chaleur
N7	Sanftanlaufsteuerung Verdichter 1	Soft start control for compressor 1	Commande de démarrage progressif compresseur 1
N8	Sanftanlaufsteuerung Verdichter 2	Soft start control for compressor 2	Commande de démarrage progressif compresseur 2
R2	Rücklauffühler	Return flow sensor	Sonde sur circuit de retour
R9	Vorlauffühler	Flow sensor	Sonde du circuit aller
R25	Drucksensor Kältekreis - Niederdruck (p0)	Pressure sensor for refrigerating circuit - low pressure (p0)	Capteur de pression circuit réfrigérant - basse pression (p0)
R26	Drucksensor Kältekreis - Hochdruck (pc)	Pressure sensor for refrigerating circuit - high pressure (pc)	Capteur de pression circuit réfrigérant - haute pression (pc)
W1	Verbindungsleitung Wärmepumpe - Manager 230V	Connecting cable, heat pump - Manager 230 V	Câble de raccordement gestionnaire de pompe à chaleur 230 V
W2	Verbindungsleitung Wärmepumpe - Manager <25V	Connecting cable, heat pump - Manager <25 V	Câble de raccordement gestionnaire de pompe à chaleur <25 V
X1	Klemmenleiste: Lasteinspeisung	Terminal strip: Incoming supply	Bornier : alimentation de charge
X2	Klemmenleiste: interne Verdrahtung = 230V	Terminal strip: internal wiring = 230 V	Bornier : câblage interne = 230 V
X3	Klemmenleiste: interne Verdrahtung < 25V	Terminal strip: internal wiring < 25V	Bornier : câblage interne < 25 V
X6	Klemmenleiste: Ölsumpfheizung	Terminal strip: oil sump heater	Bornier : chauffage à carter d'huile
X12	Stecker Verbindungsleitung Wärmepumpe - Manager = 230V	Connecting cable plug heat pump - Manager = 230 V	Connecteur câble de raccordement gestionnaire de pompe à chaleur = 230 V
X13.1	Stecker Verbindungsleitung Wärmepumpe - Manager < 25V	Connecting cable plug heat pump - Manager < 25 V	Connecteur câble de raccordement gestionnaire de pompe à chaleur < 25 V
X13.2	Stecker Verbindungsleitung Wärmepumpe - Manager < 25V	Connecting cable plug heat pump - Manager < 25 V	Connecteur câble de raccordement gestionnaire de pompe à chaleur < 25 V
Y1	4-Wege-Umschaltventil	Four-way reversing valve	Vanne d'inversion 4 voies
#	Adernummer	Core number	Numéro du fil
_____	werkseitig verdrahtet	Wired ready for use	Câblé en usine
_ _ _ _	bauseits nach Bedarf anzuschliessen	To be connected by the customer as required	à raccorder par le client si besoin

4 Hydraulische Prinzipschemen / Hydraulic Plumbing Diagram / Schémas hydrauliques

4.1 Monoenergetische Anlage mit doppelt differenzdrucklosem Verteiler



4.2 Monoenergetische Anlage mit zwei Heizkreisen und Warmwasserbereitung



4.3 Legende / Legend / Légende

	Absperrventil	Shutoff valve	Vanne d'arrêt
	Überstromventil	Overflow valve	Soupape différentielle
	Sicherheitsventilkombination	Safety valve combination	Jeu de vannes de sécurité
	Umwälzpumpe	Circulating pump	Circulateur
	Ausdehnungsgefäß	Expansion vessel	Vase d'expansion
	Raumtemperaturgesteuertes Ventil	Room temperature-controlled valve	Vanne commandée par température ambiante
	Absperrventil mit Rückschlagventil	Shutoff valve with check valve	Vanne d'arrêt avec clapet anti-retour
	Absperrventil mit Entwässerung	Shutoff valve with drainage	Vanne d’arrêt avec vidange
	Wärmeverbraucher	Heat consumer	Consommateur de chaleur
	Temperaturfühler	Temperature sensor	Sonde de température
	Flexibler Anschlussschlauch	Flexible connection hose	Tuyau de raccordement flexible
	Rückschlagklappe	Check valve	Clapet anti-retour
	Dreiwegemischer	Three-way mixer	Mélangeur 3 voies
(1.1)	Luft/Wasser-Wärmepumpe	Air-to-water heat pump	Pompe à chaleur air/eau
(2)	Wärmepumpenmanager	Heat pump manager	Gestionnaire de pompe à chaleur
(3)	Reihen-Pufferspeicher	Buffer tank connected in series	Réservoir tampon en série
(4)	Warmwasserspeicher	Hot water cylinder	Réservoir d’eau chaude sanitaire
E9	Flanschheizung Warmwasser	Hot water flange heater	Cartouche chauffante eau chaude sanitaire
E10.1	Tauchheizkörper	Immersion heater	Résistance immergée
K20	Schütz 2. Wärmeerzeuger	Contactor for HG2	Contacteur du 2ème générateur de chaleur
K21	Schütz Flanschheizung	Contactor for flange heater	Contacteur cartouche chauffante
M13	Heizungsumwälzpumpe Hauptkreis	Heat circulating pump for main circuit	Circulateur de chauffage circuit principal
M15	Heizungsumwälzpumpe 2. Heizkreis	Heat circulating pump for heating circuit 2	Circulateur de chauffage 2ème circuit de chauffage
M16	Zusatzumwälzpumpe	Auxiliary circulating pump	Circulateur supplémentaire
M18	Warmwasserumwälzpumpe	Hot water circulating pump	Circulateur d'eau chaude sanitaire
M22	Mischer 2. Heizkreis	Mixer for heating circuit 2	Mélangeur 2ème circuit de chauffage
N1	Wärmepumpenmanager	Heat pump manager	Gestionnaire de pompe à chaleur
R1	Außenwandfühler	External wall sensor	Sonde sur mur extérieur
R2.1	Zusatzrücklauffühler	Additional return flow sensor	Sonde supplémentaire sur circuit de retour
R3	Warmwasserfühler	Hot water sensor	Sonde sur circuit d'eau chaude sanitaire
R5	Temperaturfühler 2. Heizkreis	Temperature sensor for heating circuit 2	Sonde de température 2ème circuit de chauffage

5 Konformitätserklärung / Declaration of Conformity / Déclaration de conformité

EG - Konformitätserklärung
EC Declaration of Conformity
CE Déclaration de conformité CE ©

Der Unterzeichnete / *The undersigned* / *La société soussignée,*

Glen Dimplex Deutschland GmbH
Geschäftsbereich Dimplex
Am Goldenen Feld 18
D - 95326 Kulmbach

bestätigt, dass das (die) nachfolgend bezeichnete(n) Gerät(e) aufgrund seiner (ihrer) Konzipierung und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den einschlägigen grundlegenden Anforderungen der EG-Richtlinien entspricht (entsprechen).

Bei einer nicht mit uns abgestimmten Änderung des (der) Gerät(e)s verliert diese Erklärung ihre Gültigkeit.

hereby confirm that the design and construction of the product(s) listed below, in the version(s) placed on the market by us, conform to the relevant requirements of the applicable EC directives.

This declaration becomes invalidated if any modifications are made to the product(s) without our prior authorisation.

certifie que l'appareil / les appareils ci-après, par leur conception et leur mode de construction ainsi que par la définition technique avec laquelle il(s) sont mis en circulation par notre société, est / sont conforme(s) aux directives fondamentales CEE afférentes.

Ce certificat perd sa validité pour tout appareil modifié sans notre consentement.

Bezeichnung / Designation / Désignation

Luft/Wasser-Wärmepumpen
für Außenaufstellung mit R404A
Air-to-water heat pumps
for outdoor installation, containing R404A
Pompes à chaleur air/eau
pour installation extérieure avec R404A

EG - Richtlinien / EC Directives / Directives CEE

EG-Niederspannungsrichtlinie / EC Low Voltage Directive / Directive CEE relative à la basse tension (2006/95/EG)

EG-EMV-Richtlinie / EC EMC Directive / Directive CEE relative à la compatibilité électromagnétique (2004/108/EG)

Druckgeräterichtlinie / Pressure Equipment Directive / Directive CEE relative aux appareils sous pression (97/23/EG)

Typ(e):

AL 17TU
AL 25TU
AL 40TU

Harmonisierte EN / Harmonized EB Standards / Normes EN harmonisées:

EN 255 / EN 14511
EN 378
DIN 8901

DIN EN 60335-1 (VDE 0700 T1):2007-02	*EN 60335-1:2002+A11+A1+A12+ Corr.+A2:2006*
DIN EN 60335-2-40 (VDE 0700 T40):2006-11	*EN 60335-2-40:2003+A11+A12+A1+Corr.:2006*
DIN EN 55014-1 (VDE 0875 T14-1):2003-09	*EN 55014-1:2000+A1:2001+A2:2002*
DIN EN 55014-2 (VDE 0875 T14-2):2002-08	*EN 55014-2:1997+A1:2001*
DIN EN 61000-3-2 (VDE 0838-2):2006-10	*EN 61000-3-2:2006*
DIN EN 61000-3-3 (VDE 0838-3):2006-06	*EN 61000-3-3:1995+A1:2001+A2:2005*

Nationale Richtlinien / National Directives / Directives nationales

D	A	CH
BGR 500		SVTI

Kulmbach, 12.03.2009

Clemens Dereschkewitz
Geschäftsführer/Managing Director

Mathias Huprich
Produktionsleiter / Production Manager

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Anhang · Appendix · Annexes

6 Wartungsarbeiten / Maintenance work / Opérations de maintenance

Betreiber: Operator Opérateur	Name: Name Nom	______________________
	Anschrift: Address Adresse	______________________ ______________________
	Telefonnummer: Telephone number Numéro de téléphone	______________________
Kältekreis: Refrigerating circuit Circuit réfrigérant	Kältemittelart: Refrigerant Fluide frigorigène	______________________
	Füllmenge in kg: Total content weight in kg Quantité de remplissage en kg	______________________
	Hermetisch geschlossen: hermetically sealed Hermétiquement fermé	ja / yes / oui ☐ nein / no / non ☐

Folgende Wartungsarbeiten und Dichtheitsprüfungen gemäß Verordnung (EG) Nr. 842/2006 wurden durchgeführt:
The following maintenance and leak-proof tests have been carried out accordin to (EG) Nr. 842/2006:
Les opérations de maintenance et les contrôles d'étanchéité suivants ont été effectués selon la directive (EG) n° 84272006:

Datum Date Date	entnommen / aufgefüllt extracted / completed prélevé / rempli	Name der Fachfirma: Name of specialised company Nom de l'entreprise spécialisée	Unterschrift des Prüfers Signature of examiner Signature de l'agent de contrôle

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